The African Organisation for Standardisation

EDICT OF GOVERNMENT

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Terminologies for processing shea kernel and shea butter

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TERMINOLOGIES FOR PROCESSING OF SHEA KERENEL AND SHEA BUTTER

Foreword

The African Regional Organization for Standardization (ARSO) is a continental organization which harmonizes the standards developed by member countries and it's regional blocks. After the harmonization process member countries are then to publish the standards.
The African Regional Organization for Standardization is a member of the International Organization for Standardization (ISO).

The elaboration of this Africa Standard was carried out through a Regional Technical Committee drawn from the National Standards Bodies from the shea zone. Draft standards in the producer countries were widely circulated for public review and consultations (with direct involvement of the private sector and industry) both national and international, in order to assess and record the perspectives of a wide variety of stakeholders. The harmonisation process was done based on the African harmonisation model. The results of national consultation work was presented, reviewed and finalized at a regional inter-governmental consultation before recommending the standard to ARSO for declaration as Africa Standard.

This Africa standard comprises a selection of terms used in the shea trade covering the processing of sheakernel and sheabutter.

The objective of this standard is to establish recognized definitions for the terms in use. Reference to national and international publications as well as work of private sector and industries are hereby acknowledged.

Users should note that this standard undergoes revision from time to time and any reference to it statutorily implies its latest edition.

TERMINOLOGIES FOR PROCESSING OF SHEA KERENEL AND SHEA BUTTER

1.0 Scope

This Africa standard provides a list of terms and definitions applicable to the techniques of processing shea kernel and shea butter for commerce.

2.0 Terms and definitions relating to preparation and storage of kernel

2.1
Sheafruit
The fresh mature fruit of the shea tree *Vitellaria paradoxa* (C. F. Gaertner) consisting of a seed (usually called kernel when dry) enclosed in a testa (or shell) and covered externally by an epicarp and a mesocarp (which together are usually referred to as pulp). The kernel turns pale white to brown and the pulp becomes soft when the fruit ripens.

2.2
Collection
Periodic picking of ripe sheafruits from under shea trees and its environs for the purpose of processing into dry shea kernels.

2.3
Picking
Taking ripe shea fruits from the ground where they have fallen from the tree.

2.4
Accumulation*
The practice of collecting and storing fresh shea fruits to obtain a minimum critical quantity that is sufficient for processing into shea kernel.

2.5
Depulping
Removing the pulp of ripe shea fruits.

* When this period exceeds three days, many of the fruits germinate before parboiling, and thus jeopardizing the purpose of parboiling which is to prevent germination.

2.6
Washing
Washing of depulped shea kernel in clean water.

2.7
Parboiling
Dedulped shea fruits (sheanuts) are boiled in water to stop germinating and to make cracking of nuts easier.

2.8
Drying
Drying is the spreading of the boiled shea nuts thinly in the sun on a concrete floor or in a solar dryer or by any appropriate method until they rattle when shaken.

2.9
De-Husking
Removal of shells from the nut after cracking by winnowing.

2.10
Sorting
The removal of the remains of the shell pieces from the shea kernels after winnowing. At this stage, shea kernels that are broken, infected by mould or are black in colour are also removed to obtain clean unbroken shea kernels.

2.11
Storage
Dry shea kernels are packed in clean jute sacks and placed on wooden pallets.

2.12
Triage
Periodic inspection and discarding of damaged and infested shea kernels.

3 Terms and definitions relating to the processing of Shea butter

3.1
Shea butter
The vegetable oil extracted from the shea kernel without any changes to the nature of the oil.

3.2
Pounding or Crushing
Clean shea kernels are broken into coarse particle size to facilitate roasting.

3.3
Roasting
Subjecting crushed shea kernel pieces to intense heat either by roasting them in open pans or in a mechanical roasting machine called roaster.

3.5
Grinding (or Milling)
The practice of turning roasted kernel pieces into a fine paste by grinding manually on a stone or using attrition mill.

3.6
Aqueous Extraction
Extraction of shea butter by kneading milled shea kernel paste in warm water.

3.7
Kneading
Continuous stirring and whipping the mixture of milled shea kernel mass in warm water until the crude butter separates and floats.

3.8
Rinsing
Washing of crude butter in clean cool water to remove the non fat residue.

3.9
Mechanical extraction
Extraction of butter from roasted shea kernel pieces directly by pressing the pieces with a manual bridge press or pressing whole kernels in a mechanical expeller.

3.10
Clarification
Removal of impurities from warm liquid shea oil normally by decanting,

3.11
Wet boiling
Boiling of the separated crude butter to remove the water from it through evaporation.

3.12
Dry boiling
A further stage of boiling in a vacuum to reduce water content in given oil to 0.25 % or less.

3.13
Filtering
Passing the warm liquid oil after boiling through a fine mesh or cloth in order to remove fine texture impurities. The temperature of the oil at which filtration is best done is about 40 degrees Celsius.

3.14
Conditioning
The gradual cooling with frequent stirring of liquid shea butter until it solidifies with a fine texture.

APPENDIX A

Notes

Parboiled
Depulped sheafruits (sheanuts) must be parboiled in water in order to stop them from germinating and to make later extraction of oil from the shea kernels easy. The shea nuts become filled with water after boiling and if they are not dried to remove the water, the kernel in the fruit becomes infected with mould.

Cracking
The term cracking is used interchangeably with de-husking and de-cortication and is used to describe the removal of the dry shells of shea nuts by spreading the shea nuts on a concrete floor and hitting them lightly with a wooden mallet. The cracked shea nuts are placed in a mortar and pounded lightly to break the shells into smaller pieces so as to enable separation of kernel from shells by winnowing.

Triage
In order to preserve the quality of dried shea kernel in storage, the product should be brought out for regular visual inspection, involving emptying the jute sacks or other storage containers on a clean tarpaulin, and exposing them to air as necessary to reduce moisture levels. During inspection, all shea kernels that are damaged or infested by insects, moulds or bacteria are separated and discarded.

Cleaning
Shea kernels are obtained from various sources for processing into shea butter. Depending on the handling and storage conditions and method of transportation the shea kernels may become contaminated with dust and other materials such as mould and seeds of other plant species. These are usually removed by washing in water and sorting to obtain clean shea kernel for preparation of shea butter.

Rinsing
Washing of crude butter in clean cool water after separation from the water in which it was kneaded. Such water is brown with impurities from the milled mass. Rinsing serves to remove the residual remains of this brown water from the crude butter to give it the characteristic creamy colour.

Wet boiling
Boiling of the separated crude butter to remove all the water from it through evaporation. The duration of boiling required to evaporate all the water from the oil varies from 15 to 30 minutes from start of boiling. Water content of the oil after boiling varies from 1 to 2 %.

Dry boiling

A further stage of boiling in a vacuum to reduce water content in a given oil to 0.25 % or less. (This unit operation is practised in advanced oil factories. Small-scale processors do not have the facilities or skill for dry boiling).